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EXAMINER	
NGO, NGUYEN HOANG	
ART UNIT	**PAPER NUMBER**
2663	

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/929,627	BANKS ET AL.	
	Examiner	Art Unit	
	Nguyen Ngo	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25,27-36 and 38-57* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *23-25,27-36 and 38-53* is/are allowed.

6)☒ Claim(s) *1,2,4-6,12,14-17,19-22 and 54* is/are rejected.

7)☒ Claim(s) *3,7-11,13,18,55,56,57* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This communication is in response to the amendment of 9/13/2005. All changes made to the specification and claims have been entered. Accordingly, Claims 1-57 are currently pending in the application.

It is noted that the IDS 1449 form has a different serial number (10/742,048), inventor, filing date, and title from the application (09/929,627). Examiner believes there to be an error and corrections should be made.

Claim Objections

1. Claim 45 is objected to because of the following informalities:

As for claim 45: The "The method of claim **37** " in line should be - The method of claim 32-.

The Examiner believes that there might be a typographical error.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 5, 6, 14, 16, 17, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogawa et al. (US 6330242), hereinafter referred to as Ogawa.

Regarding claim 1, Ogawa discloses a method to transfer an IP packet from a transmission source gateway to a transfer designation gateway by way of ATM nodes (a method of sending Fibre Channel data frames (IP packets) through a Fibre Channel switch, the Fibre Channel switch comprising a plurality of small switches (ATM nodes as seen in figure 1), abstract). Ogawa further discloses the method of routing connectionless packets in the ATM network and of an IP packet containing an IP header comprising transmission source IP address and a destination IP address (Fibre Channel Data frames having a source and a destination, col4 lines 59-63) and further discloses that each ATM node detects a top cell of the packet from the ATM cells transmitted so as to perform routing of ATM cells toward the next ATM node in accordance with a destination address (the destination (destination IP address) being used for routing the Fibre Channel data frame (IP packet), col4 lines 35-39). Ogawa further discloses;

of a packet reception buffer (located in nodes of the system) which receives packets from an existing user LAN (receiving the Fibre Channel data frame (packets) from the source (user LAN) at a first small switch, col5 lines 31-35).

of a VPI/VCI transformation block that transform the VPI/VCI (choosing a first virtual channel from a set of possible virtual channels (done by VPI/VCI transformation

block), each virtual channel of the set of possible virtual channels being available for use with generic data flow, figure 7 and col7 lines 40-45).

that at ATM node 8b, the BOM cell detection block detects a top cell of the cell stream of the received IP packet (Fibre Channel frame). So, the destination address detection block detects an address of the "passing" ATM node 8c and in accordance with the destination address read, all of the cells of the same IP packet are subjected to VPI/VCI transformation (providing information in addition to the Fibre Channel data frame (IP datagram 2a of figure 2) to identify the first virtual channel (VPI/VCI of ATM header of ATM cell 2c of figure 2) and then the cell stream is transferred to the ATM node 8c (sending the Fibre Channel data frame and the addition information identifying the first virtual channel (ATM cell containing VPI/VCI (addition information) and a separate IP datagram located in the data field (Fibre Channel data frame) from the first small switch (ATM node 8b) to a second small switch (ATM node 8c) as seen from figure 2 and col8 lines 14-23). It is noted that an ATM switch may be implemented with the use of optical fibers as well known in the art.

Regarding claim 2, Ogawa discloses from figure 5 and 6 of the components of an ATM node (small switches). Ogawa discloses of a processing block 6d, which uses instructions from the destination address detection block (the Fibre Channel switch further comprises a processor (processing block) connected to each of the plurality of small switches (ATM nodes), col6 lines 60-64).

Regarding claim 5 and 6, Ogawa discloses that in accordance with the destination address read, all of the cells of the same IP packet, are subjected to VPI/VCI transformation (the first virtual channel is chosen based on the destination of the Fibre Channel data frame, col8 15-24) and further discloses the provision of the BOM addition block 7i which enables source routing that uses the ATM node as the transmission source (based on the source, col7 lines 44-46).

Regarding claim 14, Ogawa discloses of transferring a cell from ATM node 1b to ATM node 1c (receiving the Fibre Channel data frame (IP datagram located in ATM cell) from the first small switch at the second small switch, figure 1 and col6 lines 43-51).

that in the ATM node 1c, in accordance with the destination address read from the cell, the cell stream is subjected to VPI/VCI transformation is transferred to the ATM node 1e (providing information in addition to the original Fibre Channel data frame (IP datagram) to identify the second virtual channel (VCI transformation) and sending the Fibre Channel data frame and the additional information identifying the second virtual channel (cell including IP datagram comprising of destination address and a VCI identifier) from the second small switch to a third small switch, figure 1 and col7 lines 1-6).

Regarding claim 16, Ogawa discloses that in accordance with the destination address read, all of the cells of the same IP packet are subjected to VPI/VCI transformation (the

first virtual channel is chosen based on the destination of the Fibre Channel data frame, col8 15-24).

Regarding claim 17, Ogawa discloses all the limitation of claim 17 as seen in figure 9. Figure 9 shows the routing method of connectionless packets in an ATM network. Ogawa discloses that the received BOM cell is routed based on the destination address E.164 and is further seen from figure 9 of a routing table, which chooses a VCI associated with the destination address (determining an identity of the destination from the received Fibre Channel data frame (destination of IP datagram), and choosing the second virtual channel comprises looking up the identity of the destination in a routing table, figure 9 and 35-50).

Regarding claim 20, Ogawa discloses transferring an IP packet to a destination gateway by way of ATM nodes (sending the Fibre Channel data frame from the third switch (node 1e) to the destination (node 1g), figure 1 and abstract).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (US 6330242) in view of Kilkki et al. (U.S Patent No. 6,411,617), hereinafter referred to as Ogawa and Kilkki.

Regarding claim 4, Ogawa fails to disclose the limitation of the data having a priority level, each virtual channel having a priority level, and having the priority levels of the data and each virtual channel within the set of possible virtual channels be the same.

Kilkki however discloses a method to distinguish the priority levels of ATM cells using the virtual channel identifier (VCI) of the ATM cell. Thus certain virtual channels would be reserved for a particular priority level (priority levels of data and virtual channel be the same, col13 lines 10-20).

It will thus be obvious to a person skilled in the art to incorporate the method for providing the transfer of an IP packet from a transmission source to a destination by way of ATM nodes as disclosed by Ogawa with the method to distinguish the priority levels of ATM cells disclosed by Kilkki, to communicate and distinguish data with different QoS or priority levels.

7. Claims 12, 19, and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (US 6330242) in view of Endo et al. (U.S Patent No.6275494), hereinafter referred to as Ogawa and Endo.

Regarding claim 12, 19, and 22, Ogawa fail to disclose the specific limitations related to claim 12, 19, and 22.

Endo however discloses of a processor that retrieves the transit flow management table using the destination IP address, source IP address and port number of the received packet (determining the destination of the Fibre Channel data frame (IP datagram)) to check whether the table has a match content. If a matching content is detected in the table, the processor reads out the output interface number (retrieving an identity of a port from a routing table, the port identity being associated with the destination in the routing table) and adds the output interface number (output port) to the ATM header and sends the created cells to the output interface number corresponding to the output interface number added to the cell (the Fibre Channel data frame (IP datagram) and the information identifying the first virtual channel (VCI added to the IP datagram as disclosed by Ogawa) is sent from the first small switch to the second small switch through the port, col8 lines 7-18) and gives the motivation for a method to effectively route information to the correct port.

It will thus be obvious to a person skilled in the art to incorporate the method for providing the transfer of an IP packet from a transmission source to a destination by

way of ATM nodes as disclosed by Ogawa with the method to identifying a port as disclosed by Endo, to effectively route information in a node (switch) to the correct destination through a designated port.

8. Claim15, 21, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (US 6330242) in view of Nishimura et al. (U.S Patent No.2004/0202108), hereinafter referred to as Ogawa and Nishimura.

Regarding claim 15 and 21, Ogawa fails to disclose the specific limitation of having each virtual channels have a respective buffer.

Nishimura however discloses of an ATM switch that includes a buffer unit having individual VC queues each corresponding to each virtual channel for storing a packet (wherein each of the set of possible virtual channels has a respective buffer and further comprising storing the Fibre Channel data frame in the second small switch in a buffer associated with the first virtual channel, page 5 [0075]). It would thus be obvious to a person skilled in the art to incorporate the method to store packets in respective queues associated with a virtual channel as disclosed by Nishimura into the method for providing the transfer of an IP packet from a transmission source to a destination by way of ATM nodes as disclosed by Ogawa, to effectively carry out traffic control (congestion prevention) and manage the ATM cells in a switch.

Regarding claim 54, Ogawa discloses a system of loose source routing method to transfer an IP packet from a transmission source gateway to a transfer designation gateway by way of ATM nodes (A Fibre Channel switch (system) for switching Fibre Channel data frames, abstract). Ogawa further discloses that the system comprises;

of a transmission source gateway which receives IPP packets from the user LAN (a first small Fibre Channel switch, col4 lines 21-24).

of ATM nodes which are arranged in the ATM network in direction from the transmission source gateway to the transfer destination gateway (a second small Fibre Channel switch (ATM node) coupled to the first small Fibre Channel switch, col4 lines 31-34). Ogawa further discloses that each node in the system comprises;

reception blocks which work as an input interface unit and transmission block which work as an output interface unit (a plurality of ports including a plurality of external ports (reception block) for coupling to external devices (user LAN) and a plurality of internal ports (transmission blacks and reception blocks between nodes) for connection to a small Fibre Channel switch, figure 5 and col5 lines 56-63).

of routing connectionless packets in the ATM network and of an IP packet containing an IP header comprising transmission source IP address and a destination IP address (Fibre Channel Data frames having a source and a destination, col4 lines 59-63) and further discloses that each ATM node detects a top cell of the packet from the ATM cells transmitted so as to perform routing of ATM cells toward the next ATM node in accordance with a destination address (logic operable to determine an identification of a destination of a Fibre Channel data frame (IP packet) for routing

purposes based on the destination address (IP address) of the frame, col4 lines 35-39). Ogawa further discloses;

of a VPI/VCI transformation block that transform the VPI/VCI (determine an identification of a virtual channel available for general data flow to apply to received Fibre Channel data frames (VCI transformation and encapsulation of the IP packet), figure 7 and col7 lines 40-45).

of having the ATM node 1b (first small Fibre Channel switch) detect the destination IP address of the detected BOM cell 3a and determines if it coincides with an address value of the ATM node 1b and that in accordance with the destination address read from cell 3a, all the cells belonging to the same IP packet (based on destination), are subjected to VCI transformation (first switch uses a first basis (IP destination of cell 3a) to identify the virtual channel, col6 lines 43-51) which are then transferred to the ATM node 1c (second small Fibre Channel switch). Ogawa further discloses that at ATM node 1c (second switch), the destination address detection block detect the destination address of the cell 3b (different basis) and in accordance with the destination address from the cell 3b, the cell stream is subjected to VPI/VCI (the second small Fibre Channel switch uses a second, different basis (different destination address) to identify the virtual channel, col6 lines 52- col7 lines 5). It is noted that an ATM switch may be implemented with the use of optical fibers as well known in the art.

Ogawa however fails to disclose the specific limitation of having a plurality of buffers, each buffer associated with a respective virtual channel.

Nishimura however discloses of an ATM switch that includes a buffer unit having individual VC queues each corresponding to each virtual channel for storing a packet (each buffer associated with a respective virtual channel, page 5 [0075]). It would thus be obvious to a person skilled in the art to incorporate the method to store packets in respective queues associated with a virtual channel as disclosed by Nishimura into the method for providing the transfer of an IP packet from a transmission source to a destination by way of ATM nodes as disclosed by Ogawa, to effectively carry out traffic control (congestion prevention) and manage the ATM cells in a switch.

Allowable Subject Matter

9. Claims 3, 7-11, 13, 18, 55, 56, and 57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 23-25, 27-31, 32-36, 38-45, 46-49, and 50-53 are allowed.

11. Claims 23 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly disclose **a memory storing an identity of a virtual channel associated with each source port and available for general data flow; and to retrieve a first virtual channel identifier identifying a first virtual channel associated with the first source port from the memory.** It is noted

that the closest prior art Ogawa (US 6330242) shows a system and method for a loose source routing method which is provided to transfer an IP packet from source to destination comprising having the IP packet (Fibre Channel data frame) be dissolved into ATM cells which comprises the IP packet (including destination address) and the VCI to the next passing node. However the stated prior art fails to disclose or render obvious to the above underline limitations as claimed.

12. Claims 32 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly disclose **determining which port and an identity of a virtual channel to output the Fibre Channel data frame on and outputting the Fibre Channel data frame and the additional information through the determined port.** It is noted that the closest prior art Ogawa (US 6330242) shows a system and method for a loose source routing method which is provided to transfer an IP packet from source to destination comprising having the IP packet (Fibre Channel data frame) be dissolved into ATM cells which comprises the IP packet (including destination address) and the VCI to the next passing node. However the stated prior art fails to disclose or render obvious to the above underline limitations as claimed.

13. Claims 46 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly disclose **a memory storing an identity of a virtual channel associated with each external port and available for general data flow; and to determine an identification of a virtual channel on which to**

output received Fibre Channel data frame. It is noted that the closest prior art Ogawa (US 6330242) shows a system and method for a loose source routing method which is provided to transfer an IP packet from source to destination comprising having the IP packet (Fibre Channel data frame) be dissolved into ATM cells which comprises the IP packet (including destination address) and the VCI to the next passing node. However the stated prior art fails to disclose or render obvious to the above underline limitations as claimed.

14. Claims 50 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly disclose **determining an identification of a virtual channel available for general data flow on which to output received Fibre Channel data frames, the determination of the virtual channel based on the source port receiving the Fibre Channel data frames.** It is noted that the closest prior art Ogawa (US 6330242) shows a system and method for a loose source routing method which is provided to transfer an IP packet from source to destination comprising having the IP packet (Fibre Channel data frame) be dissolved into ATM cells which comprises the IP packet (including destination address) and the VCI to the next passing node. However the stated prior art fails to disclose or render obvious to the above underline limitations as claimed.

Response to Amendment

15. Applicant's arguments filed 9/13/2005 have been fully considered but they are not persuasive.

16. The applicant argues that the cited reference from the first action teaches of an ATM switch, which is different from the claimed Fibre Channel switch and further argues that an ATM network is a connection-based network. It is however noted that an ATM network is capable of providing both a convention connection-oriented service and a connectionless service as shown in Ogawa et al. (US 6,330,242) which discloses a routing system for at least one ATM node (ATM switch) for detecting a destination address of the IP packet from the ATM cells and rewriting VCI of the ATM cells of the IP packet in accordance to the detected destination address and that the destination IP address corresponds to an address of the ATM node through which the ATM cells of the IP packet pass (IP packet correlating to Fibre Channel data frame which uses destination address (not VPI/VCI) for routing and is further encapsulated in an ATM cell comprising a VCI (additional information identifying the first virtual channel)). It is further shown in reference US 6,178,169 of an ATM network, which is capable of connectionless service, which is no relied upon. It is thus clearly shown (with regards to Ogawa) in the discussion of claims, that the destination address in the IP datagram is used for routing purposes and encapsulates the IP datagram into a ATM cell including a VCI (providing VCI in addition to the frame (IP datagram)).

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Hodgkinson et al. (US 6178169), Method of Transmitting An ATM Cell Over An ATM network.

b) Kago (US 6785238), LAN Relaying/Switching Apparatus.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Ngo whose telephone number is (571) 272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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